

CLOCK AND CALENDAR

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- 1) What is the angle between the two hands of a clock when the time shown by the clock is 6:30 PM?
- a) 100 b) 50 c) 30 d) 15

$$= 30(h) - \frac{11}{2}(m)$$

$$= 30(6) - \frac{11}{2}(15) \Rightarrow 180 - \frac{11}{2}(15) \Rightarrow 180 - 165 = 15$$

- 2) At what time between 3 and 4 o'clock will the minute hand and the hour hand be on the same straight line but facing opposite directions.

a) 3:49

b) 3:15

d) 3:39 $\frac{1}{11}$

c) 3:49 $\frac{1}{11}$

$$180 = \frac{11}{2}(m) - 30(h)$$

$$180 = \frac{11}{2}(m) - 30(3)$$

$$180 = \frac{11}{2}(m) - 90 \Rightarrow 270 = \frac{11}{2}(m) \Rightarrow 540 = 11m \Rightarrow m = 49 \frac{1}{11}$$

3:49 $\frac{1}{11}$

- 3) By how many degree does the minute hand move in the same time, in which the hour hand move by 280?

a) 168

b) 336

c) 196

d) 376

	H	M
1 hr	360	360
1 min	6	$\frac{1}{2}$

1 division = 5 mins $\times 6^\circ = 30^\circ$

It will move 280° in $\frac{280}{30} = \frac{28}{3}$ hours.

So, it will move = $\frac{28}{3} \times 360 = 3360^\circ$

It will complete 9 rounds completely and 120 more.

So answer is 336

- 4) At what time, between 3 o'clock and 4 o'clock, both the hour hand and minute hand coincide each other?

a) 3:30

b) 3:16 $\frac{4}{11}$

c) 3:16 $\frac{4}{11}$

d) 3:16 $\frac{7}{11}$

coincide at 65 $\frac{5}{11}$

3:15 $\frac{15}{11}$

3:16 $\frac{4}{11}$

5) How many degree will the minute hand move, in the same time in which the second hand move 4800.

- a) 60 b) 90 c) 140 ☒ d) 80

$$\frac{4800}{60} = 80 \text{ mins.}$$

$$1 \text{ min} = 60^\circ$$

$$80 \text{ mins} = 4800^\circ$$

6) How many years have 29 days in February from 2001 to 2100?

- a) 26 b) 25 c) 23 ☒ d) 24

$$a = 2004 \quad a_n = 2096 \quad d = 4$$

$$\frac{2100}{400} = 5.25 \Rightarrow \text{not leap year.}$$

$$a_n = a + (n-1)d$$

$$2096 = 2004 + (n-1)4$$

$$92 = 4n - 4$$

$$96 = 4n$$

$$n = 24$$

7) 2012 January 1st is Saturday, then which day is the Indian Independence day of the same year.

a) Saturday

☒ b) Wednesday

c) Thursday

d) Friday.

Jan 1st 2012 = Sunday

Aug 15th 2012 = Independence day.

* no. of days of month - 28 days for all month. if it passes through full month.

$$\text{Jan} = 3$$

$$\text{Feb} = 28 - 28 = 0$$

$$\text{Mar} = 31 - 28 = 3$$

$$\text{Apr} = 30 - 28 = 2$$

$$\text{May} = 31 - 28 = 3$$

$$\text{June} = 30 - 28 = 2$$

$$\text{July} = 31 - 28 = 3$$

$$\text{Aug} = 15$$

$$\text{Total} = 31$$

$$\frac{31}{7} = \text{Remainder (3)}$$

Sunday + 3 = Wednesday.

8) Which year has the same calendar as 1700

a) 1705

☒ b) 1706

c) 1707

d) 1708

$$1700 \Rightarrow 52 \text{ week} + 1 \text{ day (NL)}$$

$$1701 \Rightarrow 52 \text{ week} + 1 \text{ day (NL)}$$

$$1702 \Rightarrow 52 \text{ week} + 1 \text{ day (NL)}$$

$$1703 \Rightarrow 52 \text{ week} + 1 \text{ day (NL)}$$

$$1704 \Rightarrow 52 \text{ week} + 2 \text{ day (L)}$$

$$1705 \Rightarrow 52 \text{ week} + 1 \text{ day (NL)}$$

$$\text{Sum of All} = 7 \text{ day}$$

$$\text{Sum of All} + 1$$

$$1705 + 1 = 1706$$

9.) If Arun's birthday is on May 25 which is Monday and his sister's birthday is on July 13. Which day of the week is his sister's birthday.

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- ☒ a) Monday b) Wednesday c) Thursday d) Friday

May = 6
June = 2
July = 13

$$\frac{21}{7} = \text{Remainder } (0)$$

\therefore So same day

Total = 21

10.) March 1st is Wednesday. Which month of the same year starts with the same day?

- a) October ☒ b) November c) December d) None of these

March has = 31 days \rightarrow to April

April has = 30 days \rightarrow to May

May has = 31 days \rightarrow to June

June has = 30 days \rightarrow to July

July has = 31 days \rightarrow to August

August has = 31 days \rightarrow to September

September has = 30 days \rightarrow to October

October has = 31 days \rightarrow to November

March to November is only divisible by 7.

$$\frac{245}{7} = 35 \quad (0) \text{ Remainder}$$